

Abstract

Thin-film LED comprising a current expansion structure

In a thin-film LED comprising an active layer (7) made of a nitride compound semiconductor, which emits electromagnetic radiation (19) in a main radiation direction (15), a current expansion layer (9), which is disposed downstream of the active layer (7) in the main radiation direction (15) and is made of a first nitride compound semiconductor material, a main area (14), through which the radiation emitted in the main radiation direction (15) is coupled out, and a first contact layer (11, 12, 13) arranged on the main area (14), the transverse conductivity of the current expansion layer (9) is increased by formation of a two-dimensional electron or hole gas. The two-dimensional electron or hole gas is advantageously formed by embedding at least one layer (10) made of a second nitride compound semiconductor material in the current expansion layer (9).

Significant Figure: Figure 1A